

IN THE CLAIMS:

Please cancel Claim 10 without prejudice or disclaimer of subject matter and amend the claims as shown below. The claims, as currently pending in the subject application, now read as follows:

1. (Currently Amended) A sensing apparatus comprising:
a transmission line for propagating an electromagnetic wave therethrough; and
a detection ~~means~~ unit for detecting propagation state of the electromagnetic wave at an arbitrary location on the transmission line,
wherein an interaction between an object disposed in the vicinity of the transmission line and the electromagnetic wave is detected, and
wherein the transmission line has a resonance structure for confining the propagating electromagnetic wave, and the resonance structure comprises a distributed reflective region having a periodic structure.

2. (Currently Amended) The sensing apparatus according to claim 1, further comprising an electromagnetic wave generating ~~means~~ unit.

3. (Currently Amended) The sensing apparatus according to claim 2, wherein the transmission line and the electromagnetic wave generating ~~means~~ unit are disposed on a same substrate.

4. (Currently Amended) The sensing apparatus according to claim 2, wherein the electromagnetic wave generating ~~means~~ unit is of a current-injection type.

5. (Currently Amended) The sensing apparatus according to claim 1, wherein the detection ~~means~~ unit comprises a thin-line-shaped probe.

6. (Currently Amended) The sensing apparatus according to claim 1, wherein the detection ~~means~~ unit comprises a probe with a tip of a diameter which is not more than 1/10 of a wavelength of a propagating electromagnetic wave.

7. (Currently Amended) The sensing apparatus according to claim 1, wherein the detection ~~means~~ unit detects the propagation state on the transmission line at a plurality of locations.

8. (Currently Amended) The sensing apparatus according to claim 7, wherein the detection ~~means~~ unit detects the propagation state of the electromagnetic wave at the plurality of locations by changing a relative positional relationship between the detection ~~means~~ unit and the transmission line by scanning.

9. (Currently Amended) The sensing apparatus according to claim 7, wherein the detection ~~means~~ unit that detects the propagation state of the electromagnetic wave at the plurality of locations comprises an electrooptic crystal.

10. (Cancelled)

11. (Currently Amended) A sensing apparatus according to claim 1, wherein the electromagnetic wave has a frequency within the range of 30 GHz to 30 THz.

12. (Currently Amended) A sensing apparatus comprising:
a transmission line for propagating an electromagnetic wave therethrough;
a detection ~~means~~ unit for detecting propagation state of the electromagnetic wave through the transmission line; and
a flow path disposed in the vicinity of the transmission line, for allowing an object to move therein,
wherein an interaction between the object and the electromagnetic wave is detected, and
wherein the transmission line has a resonance structure for confining a propagating electromagnetic wave, and the resonance structure comprises a reflective region having a periodic structure.

13. (Currently Amended) The sensing apparatus according to claim 12, wherein the detection ~~means~~ unit is provided at a plurality of locations.

14. (Currently Amended) The sensing apparatus according to claim 12, wherein the electromagnetic wave has a frequency within the range of 30 GHz to 30 THz.

15. (New) A sensing apparatus comprising:

a substrate;

a transmission line provided on the substrate for propagating an electromagnetic wave therethrough; and

a detection unit for detecting propagation state of the electromagnetic wave at an arbitrary location on the transmission line,

wherein an interaction between an object disposed on the transmission line and the electromagnetic wave is detected.